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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,708	07/29/2004	Kevin Patrick Capaldo	148201-1	4707

23413 7590 05/23/2006

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EXAMINER	
BUI PHO, PASCAL M	

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/710,708	CAPALDO ET AL.	
	Examiner	Art Unit	
	Pascal M. Bui-Pho	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,5,8-23 and 25-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5,8-23,25-32,34 and 36-39* is/are rejected.

7)☒ Claim(s) *33 and 35* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office action is responsive to communications filed on 20 March 2006. Presently, claims 1, 4, 5, 8-23, and 25-39 are pending.

Claim Objections

1. Claims 4 and 32 are objected to because of the following informalities:

With regards to claim 4, on line 6, "the a third predetermined angle" should be replaced to --a third predetermined angle--.

With regards to claim 32, on lines 9 and 10, "moving the film past third and fourth light sources" should be changed to --moving the film past a third and fourth light source--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5, 10, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regards to claim 5, on lines 1 and 2, the limitation "the third predetermined angle". There is insufficient antecedent basis for this limitation in the claim.

With regards to claim 10, on lines 1 and 2, the limitation "the defect comprises a repeating defect on the light-management film" has conflicting scope with claim 1, which recites on line 1 "detecting non-repeating defects".

With regards to claim 23, on lines 1 and 2, the limitation "the defect comprises a repeating defect, the repeating defected being detected" has conflicting scope with claim 21, which recites on line 1 "A method for detecting non-repeating defects".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 4, 5, and 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Liu et al. (US 6,040,584).

With regards to claim 1, Liu et al. disclose in Fig. 5 a system (300) for detecting non-repeating defects in a light-management film (400), the film having a first side and a second side, comprising: a first light source (320) configured to emit light onto the first side of the film in a first predetermined region (390) of the film, the first light source being disposed at least partially within a first conically shaped region, the first conically shaped region extending from the first predetermined region of the film outwardly from the first side having an apex proximate the first predetermined region, the first conically shaped region being centered about a first axis, the first axis extending through the first predetermined region of the film generally perpendicular to the film, the first conically shaped region extending around the first axis at a first predetermined angle within a range of 0 to 60 degrees (as shown in Fig. 5, the first predetermined angle measures near 50 degrees); a second light source (310) configured to emit light onto the second side of the film in the first predetermined region of the film; a first camera (340) configured to

receive a first portion of light reflected from the first predetermined region of the film from the first light source and a second portion of the light propagating through the film from the second light source, the first camera being disposed at least partially within a second conically shaped region, the second conically shaped region extending from the first predetermined region of film outwardly from the first side and having an apex proximate the first predetermined region, the second conically shaped region being centered about the first axis, the second conically shaped region extending around the first axis at a second predetermined angle within a range of 0 to 60 degrees (as shown in Fig. 5, the second predetermined angle measures near 0 degrees); and a signal-processing device (350, 360, 370, 380) operably coupled to the first camera configured to detect a defect in the first predetermined region of the film based on at least one of the first and second portions of light.

With regards to claim 4, Liu et al. disclose a system wherein the second light source (310) is disposed at least partially within a third conically shaped region, the third conically shaped region extending from the first predetermined region (390) outwardly from the second side and having an apex proximate the first predetermined region, the third conically shaped region being centered about the first axis, the third conically shaped region extending around the first axis at the third predetermined angle.

With regards to claim 5, Liu et al. disclose a system wherein the third predetermined angle is within a range of 0 to 60 degrees (as show in Fig. 5, the third predetermined angle measures near 0 degrees).

With regards to claim 8, Liu et al. disclose a system wherein the defect inherently comprises a non-repeating defect on the light-management film. It is herein considered that no defect is identically similar, hence non-repeating.

With regards to claim 9, Liu et al. disclose a system wherein the signal-processing device (350, 360, 370, 380) detects the non-repeating defect in the first predetermined region (390) of the film (400) based on both the first and second portions of light.

With regards to claim 10, Liu et al. disclose a system wherein the defect comprises a repeating defect, the repeating defect being detected using at least one of the first and second portions of light. It is herein considered that similar, repeating defects such as consecutive tears, wrinkles, and/or fading are detected by the above system.

With regards to claim 11, Liu et al. disclose a system wherein the first camera comprises a CCD camera (Column 22-27).

With regards to claim 12, Liu et al. disclose a system wherein the first (320) and second (310) light sources and the first camera (340) are oriented toward the first predetermined region.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (US 6,040,584) in view of Kihira (US 5,691,811).

With regards to claim 13, Liu et al. disclose in Fig. 5 a system (300) for detecting non-

repeating defects in a light-management film (400), comprising, among other features, a first camera (340). Liu et al. however remain silent with regards to said camera being out of focus by a predetermined amount. In an analogous defects detecting art, Kihira discloses in Fig. 1 a system for detecting non-repeating defects in a light-management film (3), comprising, among other features, a camera (4) out of focus by a predetermined amount (Summary). At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Liu et al. in view of Kihira in order to improve image resolution.

8. Claims 14-20, 25-32, 34, and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (US 6,040,584) in view of Stringa (US 5,598,006).

With regards to claim 14, Liu et al. disclose in Fig.5 a system for detecting non-repeating defects in a light-management film, the film having a first side and a second side, comprising: a first light source (320) configured to emit light onto the first side of the film in a first predetermined region (390) of the film, the first light source being disposed at least partially within a first conically shaped region, the first conically shaped region extending from the first predetermined region of the film outwardly from the first side having an apex proximate the first predetermined region, the first conically shaped region being centered about a first axis, the first axis extending through the first predetermined region of the film generally perpendicular to the film, the first conically shaped region extending around the first axis at a first predetermined angle within a range of 0 to 60 degrees (as shown in Fig. 5, the first predetermined angle measures near 50 degrees); a second light source (310) configured to emit light onto the second side of the film in the first predetermined region of the film; a first camera (340) configured to receive a first portion of light reflected from the first predetermined region of the film from the

first light source and a second portion of the light propagating through the film from the second light source, the first camera being disposed at least partially within a second conically shaped region, the second conically shaped region extending from the first predetermined region of film outwardly from the first side and having an apex proximate the first predetermined region, the second conically shaped region being centered about the first axis, the second conically shaped region extending around the first axis at a second predetermined angle within a range of 0 to 60 degrees (as shown in Fig. 5, the second predetermined angle measures near 0 degrees); and a signal-processing device (350, 360, 370, 380) operably coupled to the first camera configured to detect a defect in the first predetermined region of the film based on at least one of the first and second portions of light. Liu et al. however remain silent with regards to a third light source configured to emit light onto the second side in a second predetermined region of the film; a fourth light source configured to emit light onto the first side of the light-management film in the second predetermined region of the film; and a second camera configured to receive a third portion of light reflected from the second predetermined region of film from the third light source and a fourth portion of the light propagating through the film from the fourth light source, the signal-processing device operably coupled to the second camera, the signal-processing device being configured to detect a defect in the second predetermined region of the film based on at least one of the third and fourth portions of light. In an analogous defects detection art, Stringa discloses in Fig. 1 a system for detecting non-repeating defects in a light-management film (1), wherein identical imaging/illumination components (2-5) are positioned on an opposite first and second side of said film to allow inspection on both faces. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Liu et al. in view of Stringa in

order to view defects from two positions and hence, provide greater precision in detecting defects.

With regards to claim 25, Liu et al. disclose in Fig. 5 a system (300) for detecting repeating defects in a light-management film (400), the film having a first and a second side, comprising: a first light source and second light sources (310, 320) configured to emit light onto the first and second sides, respectively, of the film, the first light source emitting light during a first predetermined time period when the second light source is not emitting light, the second light source emitting light during a second predetermined time period after the first predetermined time period when the first light source is not emitting light (Column 5, line 65 – Column 6, line 37); a first camera (340) disposed adjacent the first side of the film proximate the first light source that receives transmissive and reflected light from the film and generates a plurality of digital images of the film covering a first region (390) of the film to a second region of the film as the film moves in an axial direction; and a signal processing device (350, 360, 370, 380) configured to detect the repeating defect. Liu et al. however remain silent with regards to a third and fourth light source configured to emit light onto the first and second sides, respectively, of the film, the third light source emitting light during a first predetermined time period when the fourth light source is not emitting light, the fourth light source emitting light during a second predetermined time period after the first predetermined time period when the third light source is not emitting light; a second camera disposed adjacent the second side of the film proximate the fourth light source that receives either transmissive or reflected light from the film and generates a second plurality of digital images of the film covering the first region of the film to the second region of the film as the film moves in the axial direction; and a signal-processing device

operably coupled to the first and second cameras configured to detect the repeating defect in the film based on the first and second plurality of digital images. In an analogous defects detection art, Stringa discloses in Fig. 1 a system for detecting repeating defects in a light-management film (1), the film having a first side and a second side, wherein identical imaging/illumination components (2-5) are positioned on an opposite first and second side of said film to allow inspection on both faces; and an inherently present signal-processing device operably coupled to the first and second cameras to detect the repeating defect in the film based on the first and second plurality of digital images, one of ordinary skill in the art would recognize that a processing device is necessary in order to process and output detection signals. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Liu et al. in view of Stringa in order to view defects from two positions and hence, provide greater precision in detecting defects.

With regards to claim 32, Liu et al. disclose in Fig. 5 a method for detecting repeating defects in a light-management film (400) having a first side and a second side, the method comprising: moving the film past first and second light sources (310, 320) disposed proximate the first and second sides, respectively, of the film; emitting light (322) from the first light source onto the first side for a first predetermined time period while not emitting light from the second light source and then emitting light from the second light source onto the first side for a second predetermined time period while not emitting light from the first light source (Column 5, line 65 – Column 6, line 37); generating a first plurality of digital images of the film covering a first region (390) of the film to a second region of the film using a first camera (340) disposed adjacent the first side of the film that receives transmissive and reflected light from the film. Liu

et al. however remain silent with regards to moving the film past a third and fourth light source disposed proximate the first and second sides, respectively, of the film; emitting light from the third light source onto the first side for a first predetermined time period while not emitting light from the fourth light source onto the second side for a second predetermined time period while not emitting light from the third light source; generating a second plurality of digital images of the film covering the first region of the film to the second region of the film using a second camera disposed adjacent the second side of the film that receives either transmissive or reflected light from the film; and detecting a repeating defect in the film based on the first and second plurality of digital images. In an analogous defects detection art, Stringa discloses in Fig. 1 a method for detecting repeating defects in a light-management film (1), the film having a first side and a second side, wherein identical imaging/illumination components (2-5) are positioned on an opposite first and second side of said film to allow inspection on both faces; and an inherently present signal-processing device operably coupled to the first and second cameras to detect the repeating defect in the film based on the first and second plurality of digital images, one of ordinary skill in the art would recognize that a processing device is necessary in order to process and output detection signals. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Liu et al. in view of Stringa in order to view defects from two positions and hence, provide greater precision in detecting defects.

With regards to claim 34, Liu et al. disclose a method wherein the first camera (340) is disposed at least partially within a first conically shaped region, the first conically shaped region extending from the first predetermined region (390) of film outwardly from the first side and having an apex proximate the first predetermined region, the first conically shaped region being

centered about a first axis, the axis extending through the first predetermined region of film generally perpendicular to the film, the first conically shaped region extending around the first axis at a predetermined angle (see Fig. 5).

With regards to claims 15, 17, 19, 26, 28, 30, 36, and 38, Liu et al. disclose a system/method (300) wherein a camera (340) is disposed at least partially within a conically shaped region, the conically shaped region extending from a predetermined region (390) of film outwardly from a side and having an apex proximate the predetermined region, the conically shaped region being centered about an axis, the axis extending through the predetermined region of film generally perpendicular to the film, the conically shaped region extending around the axis at a predetermined angle.

With regards to claims 16, 18, 20, 27, 29, 31, 37, and 39, Liu et al. disclose a system/method wherein the predetermined angle is within a range of 0 to 60 degrees (see Fig. 5).

9. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (US 6,040,584) in view of Rivera et al. (US 7,030,400).

With regards to claim 21, Liu et al. disclose in Fig. 5 a method for detecting non-repeating defects in a light management film (400) having a first side and a second side, the method comprising: emitting light from a first light source (320) onto the first side of the film in a first predetermined region (390) of the film; emitting light from a second light source (310) onto the second side of the light-management film in the first predetermined region of the film; generating a first digital image from a first portion of the light reflected from the first predetermined region of film from the first light source; generating a second digital image from a second portion of the light propagating through the film from the second light source. In an

analogous defects detection art, Rivera et al. disclose in Figs. 2 and 3 a method for detecting non-repeating defects in a light-management film (W) having a first side and a second side, the method comprising, among other steps, generating a first digital image (R1-R4) from a first portion of the light (RL) reflected from the first predetermined region of film; generating a second digital image (T1-T4) from a second portion of the light (TL) propagating through the film; summing (20) the first and second digital images to obtain a summed image; and detecting (30, 40) a defect in the film based on the summed image. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Liu et al. in view of Rivera et al. in order to acquire visual results of higher quality.

With regards to claim 22, Liu et al. disclose a method wherein the defect comprises a non-repeating defect, the non-repeating defect being detected using both the first and second portions of light (propagating and reflecting). It is herein considered that no defect is identically similar, hence non-repeating.

With regards to claim 23, Liu et al. disclose a method wherein the defect comprises a repeating defect, the repeating defect being detected using at least one of the first and second portions of light. It is herein considered that similar, repeating defects such as consecutive tears, wrinkles, and/or fading are detected by the above method.

Allowable Subject Matter

10. Claims 33 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not anticipated and/or does not render obvious a method of detecting a repeating defect comprising, among other steps: detecting first, second, and third defects using the summed digital image and storing first, second, and third coordinates associated with the first, second, and third defects, respectively, in a memory; and determining that the repeating defect is present when an axial distance between the first and second coordinates is substantially equal to an axial distance between the second and third coordinates.

Response to Arguments

12. Applicant's arguments with respect to claims 1, 4, 5, 8-23, and 25-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pascal M. Bui-Pho whose telephone number is (571) 272-2714. The examiner can normally be reached on Monday through Friday: 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pascal M. Bui-Pho
Examiner, Art Unit 2878
16 May 2006

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